

Situation Analysis of In-Service Teachers' Expertise of Teaching Literacy to Visually Impaired Students Using Braille

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Abstract

This study investigated in-service teachers' knowledge of utilising Braille and ability to teach Literacy to people with learning difficulties in this setting. Understanding the many types of information these instructors possessed was critical for understanding how they integrated distinct teacher' knowledges' in imparting literacy skills to visually impaired learners. The sample of the study comprised of 110 teachers of VI. Service instructors who were teaching visually impaired students were purposefully sampled. To explore how the participants processed their surroundings. The study design for this research is survey. The research is entirely quantitative. A survey is a versatile tool that may be used to gather information from a wide range of people. The research method requires that the data be either observational or experimental, or both. A survey is a method of gathering information from a larger population by having a small number of individuals participate. Participants appeared to teach Blind as a "standalone" topic, despite the fact that it is meant to also be linked with other disciplines as well as literacy instruction. This study has the potential to be reproduced in a larger region and in other circumstances. The study indicated that in-service instructors have poor expertise of various aspects of teaching reading to visually impaired pupils.

Keywords: *Teachers, Expertise, Braille*

Introduction

Education has become a social event in which children may engage as their knowledge and abilities improve. To enhance accessibility for the visually impaired, books should have a variety of textures,

sounds activated by a key, and communication modalities like as sign language and Braille. He goes on to say that tech skills and materials enable pupils to participate in intentional sports such as cutting drawing, collage creation, and sketching, which develop numerous strengths and technical services for youngsters. Furthermore, he asserts that touch displays enable access to a wide range of unique computer programmes for students with minimal duty and movement (Klinkosz et al., 2006).

Literacy is important in learners' education, according to Lenyai and Witt (2008). They go on to state it as a result of the continual disclosure of written underpinnings in a multitude of types, of circumstances, many youngsters who are not visually impaired are bright enough to learn to write and read prior to formal schooling. Incorrectly, students with visual impairments have restricted involvements in reading with their immediate environs and entire texts, mainly in developing nations where knowledge is not widely disseminated. Learners with vision impairment do not engage inside the literacy culture automatically due to a lack of Braille resources. Therefore, visually impaired instructors, position and movement coaches, and parentages schedule their reading appointments (Massof, 2009).

Literacy is a necessary tool for realizing one's full potential since it enables the development of ethical leadership and individual agency, as well as active and passive engagement in socialistic institutions both locally and worldwide (Breidegard et al., 2006). Since there was no third dimension, those who were blind or had other visual problems were unable to read written text for an extended period of time. Because to Louis Braille's development of the six-dot tactile method in the nineteenth century, blind people were able to read and write independently for the first time in human history. This was the first time in human history that this was possible. Since Braille is the main medium for blind students to learn to read and write, they have a significantly higher chance of excelling academically, gaining employment, and living independently as adults (Koenig & Holbrook, 2000; Wormsley & D'Andrea, 1997). Braille is the principal medium through which blind students learn to read and write. The purpose of this research was to examine the current level of knowledge on the usage of Braille in the classroom in order to train pupils who are blind or visually impaired in reading and writing. The use of Braille as a means of education for students who cannot read or write is being investigated. The primary goal of this research is to establish how well-versed teachers are in braille and other methods of reading suited for students with visual impairments.

Literature Review

The Braille Literacy Curriculum (Wormsley, 2011) advocated for a framework for providing a "braille-rich" environment for children, which involves placing braille in environments where a learner will be exposed to it, just as sighted and exposed to print learners are. Similarly, the Newfoundland and Labrador Division of Student Support Services (2011) emphasizes labeling objects with braille so that the kid understands the relationship between braille print and real objects.

According Swenson and Cozart (2010) there might be displays of work by children with visual impairments throughout the school, include work created in braille, or the establishment of a Braille Club, and so on. He goes on to suggest that sighted students are frequently attracted by braille and that playing treasure hunt activities that require them to use an alternative code might help them interpret messages. Alternatively, an educator may have a small team of professionals working directly with a child, as well as a larger team working to create the ideal atmosphere. This might include the student's principal,

deputy principal; special education needs coordinator, and any other adult with whom the child has contact (e.g., meal time supervisors, librarian, etc.). Lunch menus, for example, may be available in braille, with mealtime supervisors on hand to assist with their usages. Roe et al. (2014), advocated for the creation of braille name tags, braille names attached to signs, calendars, posters, print-braille publications, braille centers, and the establishment of a braille club in mainstream classrooms to provide a braille-rich environment for all children. She noticed that when sighted students see their first braille dot, they are enthralled. Students' self-confidence grows as they learn new abilities while learning braille.

Students learning braille should be encouraged to scribble on their braille writers, duplicating braille writing, in the same way those students with vision are encouraged to scribble on paper to improve their writing skills. Learners with visual impairments should be provided opportunity to practice script writing skill, such as pretending to write in braille and then reading it back to someone, much like a student with sight would read back his squiggly lines (Teach Vision). Roe et al. (2014) also emphasizes the necessity of developing early writing skills within visually impaired students—"children with blindness can pretend to write in the same way as blind children doodle on a page." The entire classroom community benefits when braille literacy activities are an integrated element of classroom learning," other studies concluded (Swenson & Cozart, 2010).

Braille Literacy Approaches and Programs

According to Lorimer (2000), the manner of teaching blind people has been a difficult issue for millennia. The braille methods for reading and writing to youngsters have evolved together with the braille code. According to Koenig and Holbrook (2000), young children require frequent Braille literacy education tailored to their specific needs (Farnsworth, 2007).

Miller (2001) understands that each student is an individual, and that no single technique of literacy instruction will work for all of them. Different approaches must be used according to individual student needs, especially for pupils with special needs (Wells-Jensen et al., 2005). "I continue to feel that there is no 'correct' approach to teach Braille, given the various variables involved," Anna Swenson commented in response to the same study done by Miller (2001). Teachers should choose the strategy that best matches the needs of each kid in each educational context."

Lamb (1998) argues that when young visually impaired pupils learn to read and write in Braille, the focus should be on building literacy skills using Braille as the medium. Teachers, according to Cunningham (2000), encourage pupils to learn to read meaningful words rather than those picked at random or appearing in a reading series as frequency or powerful words. (Wormsley, 2011). Understanding, learning, and interest are the best goals for reading teaching. After ensuring that children possess essential abilities such as phonemic awareness, phonics, fluency, and vocabulary, the focus in the early grades shifts to comprehension the broad goals of reading are the same for all students (Gersten et al., 2007).

The individualized meaning-centered approach to Braille Literacy Education (I-M-ABLE)

"The meaning-centred opinion to teaching reading," according to the researchers Rex, Koenig, Wormsley, and Baker (1994), "if we see student's experience and knowledge" The focuses of interpreting writing is what" (Wormsley, 2004).

I-M-ABLE strategy is defined by Wormsley (2011) as the selection of "organic Key

Vocabulary." Following a discussion between the teacher and the student on what is most essential, relevant, intriguing, and frightening to the learner; key vocabulary words are picked, eliciting a strong response.

Choosing important relevant phrases for students, according to Wormsley (2011), creates attention, engagement, and emotion in students. The first vocabulary terms, according to Warner has explained in (1963), the basic vocabulary terms significant to the pupil must be emotional. Instead, then learning to read a single letter with no meaning to student, the student is taught to read a word that he or she already knows. He goes on to note that while this strategy is initially child-centred, it also focuses on the curriculum.

In a review of reading education, Wormsley (2011) advocated establishing a balance between meaning and code learning, as well as curriculum and child-centred instruction. I-M-ABLE begins with a focus on meaning rather than code breaking, and then adds code or phonics education based on teaching letters of meaningful words that the child has learned to recognize in future courses (Wormsley, 2011).

The Language Experience Approach

The language experience approach is a method of creating relevant reading material based on the student's own language and experiences. This method allows the student to see the process of writing and read words. This technique, according to the researchers, is an activity-based writing education that enables students to perceive the link between their experiences, what they say, and what they write (Lee & Allen, 1963). After a field trip, for example, the instructor leads a conversation with the students about what they learned. The teacher records the learners' words on big chart paper as they talk about what they did and explains the link between sounds and written letters by sounding out the words as she writes them (Nadeem, 2015).

Wormsley (2011), like prior studies, claims that the language experience technique (Dixon & Nessel, 1983) can be used to construct stories. In this method, the TSVI and the child collaborate to write a tale about an occurrence or a topic that is meaningful to them, using the child's words. Once the narrative is complete, the TSVI and student read it aloud to each other several times until the student declares he can read it independently. The teachers help the student make a notebook to keep track of the stories they've read together and written them to the student multiple times (Wormsley, 2011).

2.9 The Functional Literacy Approach

"The aptitude for interpret with utilize information in shape of printed for activities in daily life at home, with work, in community for attaining goals of one's for expanding potential and knowledge of ones. Statistical data of Canada and the (OECD) (Canadian Council on Learning, 1997). Wormsley (2004) defines the functional technique of teaching braille literacy as using literacy in everyday tasks such as grocery shopping, reading recipes, using ATMS, paying the bills and filling out job applications, and manuals of instruction manuals. Teachers work with students to choose a crucial vocabulary word from a list of words that they are already familiar with. The emotional attachment a learner has to a word impact how motivated he or she is to study and read it; as a result, it's vital to respect the student's choice of words to learn (Wormsley, 2004 & Rex et al., 1994).

Design of Research

A survey was employed as the study approach during the duration of this examination. By definition, statistical study is what it is. A questionnaire was used to collect the data, including the statistics.

Population & Sample

We conducted a scenario analysis to establish the degree of knowledge that special education instructors in Punjab's public schools had regarding assistive technology for their students with disabilities, since all of those teachers fall within our demographic. A procedure known as simple random sampling was used to choose the sample. Information from one hundred government school (Special Education) instructors was gathered using a Google form.

Instrumentation

In order to gather information, a self-made Google form questionnaire was used.

Data gathering and analysis

The data was originally generated using Google Docs, then the statistical analysis was carried out using SPSS. We used both descriptive and inferential statistics to arrive at our conclusions. To illustrate the variations in teacher opinion across the primary categories of demographic data, percentages and frequencies were calculated, as well as an independent samples t test and a one-way analysis of variance. The results were examined, and conclusions and suggestions were made as a result.

Table 1

Frequency Distribution at the Basis of Demographics

Sr#	Description	Frequency (f)	Percentage (%)
Gender			
1	Male	41	41
2	Female	59	59
	Total	100	100%
Designation			
1	SSET	44	44
2	JSET	42	42
3	Educator	10	10
6	Other	4	4
	Total	100	100
Area			
1	Rural	30	30
2	Urban	70	70
	Total	100	100.0

Table 2

Existing knowledge of braille and literacy for children with visual impairments.

Sr#	Statements of Questions	SA	A	UD	D	SD	M	SD
1	Braille and literacy are essential to develop a culture.	50	34	4	6	6	4.16	1.14
2	Braille and literacy Distinct type of	26	52	8	10	4	3.86	1.20

3	The Braille and literacy worlds provide enormous benefits to all of us.	36	36	14	6	8	3.86	1.20
4	Braille and literacy serve as venues for us to communicate and collaborate.	36	44	8	6	6	3.98	1.10
5	Braille and literacy raise understanding of the appropriate school behavior norms.	36	46	6	10	2	1.10	1.00
6	Along with reading, writing, and arithmetic, Braille fluency is the cornerstone of a child's education.	34	46	8	4	8	3.94	1.14
7	Braille and reading platforms render youngsters susceptible to criminals, especially during times of closure and social isolation.	28	50	12	4	6	3.90	1.04
8	It creates new possibilities to learn about crucial challenges and empowers creativity in unfathomable ways.	34	46	4	10	6	3.92	3.92
9	Teachers can feel at ease while working on their classes in a braille literacy setting.	46	36	2	8	8	4.04	1.23
10	Braille and literacy that are relevant to children, rather than simply following a set course	30	40	14	8	8	3.76	1.19
11	Human-machine contact is quite different from the human-to-human interaction emphasized in communicative language schools.	26	52	6	6	10	3.78	1.19
12	New technologies necessitate new methods of thinking and teaching. You may be an effective user of modern technology as a teacher.	24	54	6	10	6	3.80	1.10

Table 3

T-Test at the Basis of Gender

Gender	N	Mean	SD	Df	T	Sig.
Male	41	106.6829	18.86987	98	.970	.009
Female	59	102.2373	24.77369			

Data from the table shows that there is a statistically significant difference in the scenario analysis of digital literacy regarding the teacher of children with various impairments depending on gender (male/female). The t-statistics ($t(23) = -1.02, *P > .05 = 3.79$) support this conclusion. It also shows that women have a higher level of knowledge than men.

Table 4

T-Test at the Basis of Area of Posting

Area of Posting	N	Mean	SD	Df	T	Sig.
Rural	28	108.2857	15.2773	98	1.171	.006
Urban	72	102.4167	24.70146			

According to the table, there is no statistically significant difference between rural and urban teachers' perceptions of in-service teachers' knowledge of teaching literacy using braille for visually impaired learners. This conclusion is based on a comparison of t-statistics ($t(98) = 1.171, P > .05 = .116$) for the two groups. It also shows that there is a statistically significant difference between instructors in rural and urban regions, with a mean difference of 5.86905.

Table 5

The difference in the opinion among teachers based on age of Respondents (one-way ANOVA test).

Age of Respondents	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	720.067	2	360.033	.704	.497
Within Groups	49597.573	97	511.315		
Total	50317.640	99			

Based on the data presented in the table, it can be concluded that there is a statistically significant difference in the perceptions of in-service teachers from Between Groups and Within Groups with regards to their familiarity with teaching literacy using braille for visually impaired students. The Between Groups sum of squares is 720.067, the df is 2, and the mean square is 360.033. The Within Groups sum of squares is 49597.573, the df is 97, and the mean square is 511.3.

Table 6

The difference in the opinion among teachers based on the Designation of participants (one-way ANOVA test).

Designation	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	10998.235	4	2749.55		
Within Groups	39319.405	95	413.888		
Total	50317.640	99		6.643	.000

Table indicates that the empirical data for Between Groups (Sum of squares=10998.235, df=4, Mean square=2749.559) and Within Groups (Sum of squares=39319.405, df=95, Mean square=413.888) with one-way ANOVA ($F(99) = 6.643, P < .05 = .000$) leads to the conclusion that there is a significant difference between the perceptions of teachers from Between Groups and Within Groups.

Table 7

The difference in the opinion among teachers based on the Area of Specialization of participants (one-way ANOVA test).

Area of specialization	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	5071.725	4	1267.931		
Within Groups	45245.915	95	476.273		

Total	50317.640	99
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Findings and Discussion

The purpose of this study was to explore the Situation Analysis of In-service Teachers' Expertise in Teaching Literacy to Visually Impaired Students Using Braille. This study used a three-Likert scale survey to get insight into teachers' current understanding of braille literacy, the implications of braille literacy, the relevance of braille literacy in quality of education, and teachers' training for braille literacy. The researcher believes that braille literacy can assist the learner understand how to perform the assignment in this study. Several evaluations were made. Cooper and Nichols provided a comprehensive description of the Early Braille Readers Project (2007). Twenty students from elementary schools in the state of Texas were each given a Mountbatten Pro Brailler as well as access to a variety of other materials as part of this study. Teachers of students who have visual impairments as well as instructors of general education received training and assistance as part of this initiative. This training and assistance came in the form of site visits, seminars, and an online forum. As a direct result of this effort, the students' levels of writing and reading competency, as well as their engagement in class and with one another, grew. In addition, the students' levels of engagement increased. This improvement was also attributable to the increased amount of engagement shown by the pupils with one another.

Conclusions and Recommendations

This research aimed to examine the knowledge of braille and literacy among teachers of children with disabilities in Punjab, as well as to conduct a situational analysis of braille and literacy for instructors of students with disabilities in that province. Researchers, led by experts in the area of special education, discussed the present state of knowledge about braille and literacy among instructors, as well as the practical applications of these skills for students with disabilities. The results show that educators are knowledgeable about braille and literacy, and that the use of braille by visually-impaired pupils is actively promoted in educational and public settings. Experts all agreed that teaching pupils with impairments braille was a great way to boost their skills and performance. Without computer literacy programs, it is incredibly challenging to instruct children who are blind or visually impaired and cannot read braille. It is suggested that seminars and workshops be held for special education teachers at Punjab's government-run special education schools so that they may learn more about braille and reading strategies for students with special needs. Instructors should be required to participate in periodic training to refresh their knowledge of braille literacy and its application to the education of students with disabilities.

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